State of California

Department of Finance

Feasibility Study Report

Preparation Instructions

June 2003

INTRODUCTION TO

THE FEASIBILITY STUDY REPORT

Overview

These Feasibility Study Report (FSR) instructions have been prepared to assist State of California agencies in meeting the Department of Finance (Finance) requirements for documentation of feasibility studies for information technology project proposals.

The requirements for initially justifying projects through the Feasibility Study Report (FSR), including the circumstances in which FSRs must be approved by Finance, are described in policy statements contained in State Administrative Manual (SAM) Sections 4920 through 4942.

The FSR provides a basis for understanding and agreement among project management, program management, and executive management, as well as state-level control agencies. The FSR provides a summary of the results of the feasibility study and, as such, should be prepared at a level of detail commensurate with the scope and complexity of the proposed technical solution. Sufficient technical detail should be included in the FSR to demonstrate that the proposed solution to the business problem or opportunity is workable and realistic. Agencies are required to complete all sections and subsections of the FSR, including the Information Technology Project Summary Package.

Investment Analysis

Finance approval of IT projects will be based on an evaluation of overall costs, benefits, competing statewide needs, and investment risks to the State over the life of the IT proposal. To determine whether these investments should be approved, Finance will:

1) evaluate each FSR, any related budget request, and any supporting documentation, to determine the proposal's consistency with the State's IT policies and standards;
2) evaluate the FSR, any related budget request, and any supporting documentation, for business and fiscal factors that establish the merits of the proposed investment; and
3) consider the agency's assessment of the potential business risks that impact the expected benefits to be derived from the proposed IT expenditures.

In order for Finance to evaluate the business and fiscal factors associated with the proposed IT project, agencies must provide sufficient information in the FSR and any necessary supporting documentation. The documentation provided must enable Finance to understand and concur with the relative need for, cost of, and benefits to be derived from the proposed IT investment. Specifically, the information must establish that the organization has a solid **business case** for, and will receive meaningful **business value** from the proposed IT expenditure.

In an environment of competing needs, an acceptable business case is a compelling justification for the expenditure of public resources on IT to address an agency's business needs. The business case is centered on (1) business problems that substantially and adversely impact operations and/or the delivery of services, (2) business opportunities that may substantially improve operations and/or the delivery of services, (3) revenue generation, or (4) a legislative mandate.

Acceptable business value is substantial and sustainable increases in *operational efficiency* (ability to produce desired effect with minimum expenditure of time, effort, personnel, or money as manifested in cost savings and/or cost avoidances) and/or *service effectiveness* (type, quantity, or quality of services delivered in response to, and aligned with, statutory and policy requirements).

Information Technology Reporting Requirements

Finance requires specific information from agencies to carry out its responsibilities in approving the expenditures and funding for information technology (IT) activities, initiatives, or projects (hereinafter referred to as "proposals"). In order to evaluate an agency's proposed expenditures for IT proposals, Finance needs to fully understand the business/investment justification for the proposal. Each proposal must provide sufficient detail to describe the underlying assumptions, objectives, alternatives considered, proposed solution, plan to accomplish the proposed solution, impact on program service delivery, programmatic and financial benefits to be achieved, and all costs associated with the proposal, including the methods of calculation and sources of data for all fiscal data used. These proposals are typically documented in FSRs

Agencies must provide a comprehensive written proposal and not rely on responding to Finance staff's questions to provide needed justification for the proposal. Proposals that are incomplete by virtue of failing to provide relevant information in written form may be returned to the agency without consideration at the discretion of Finance.

Agencies submitting IT proposals that meet one or more of the Finance reporting criteria must follow the documentation requirements defined in the State Administrative Manual (SAM) and these instructions. Each agency is responsible for ensuring its IT proposals meet Finance requirements. At its discretion, the Finance may request additional information from the agency.

Information Technology Proposal Transmittal Requirements

All IT proposals **must be:**

1) Approved and transmitted under the signatures of the:
   - Department's Chief Information Officer (CIO),
   - Department's Budget Officer,
   - Department's Director or designee (other than the CIO or Budget Officer), and
   - Agency Secretary, if the department reports to an Agency Secretary.

   The "Information Technology Project Request Executive Approval Transmittal" will be used to satisfy this transmittal requirement.

2) Submitted in triplicate to Finance - TIRU.
3) Submitted to the Office of the Legislative Analyst (one copy)
4) Submitted to DGS/PD when delegated purchasing authority is exceeded (one copy).

New Information Technology Investments

Each proposal that meets the Finance reporting criteria to undertake a new IT project must be reported to Finance using the FSR. Finance will issue its decision on the proposal in writing to the agency.

Finance will review each FSR placing emphasis on the following elements of the proposal:

1) the description of the agency's program(s), program objectives and current business processes to be impacted by the IT proposal;
2) the description of the business problem or opportunity prompting this request;
3) the description of the measurable business objectives which must be met to solve the problem or realize the opportunity;
4) the description of the business functional requirements that must be met with any proposed solution;
5) a narrative or tabular display showing which business objectives address the identified business need and which business functions address each identified business objective (traceability matrix);
6) the description of the expected quantified programmatic and financial benefits (revenue generation, savings, and cost avoidances) to be achieved by meeting the business objectives;
7) the analysis of the existing system(s) and all ***feasible*** alternatives identifying to what extent the problems will be resolved, opportunities will be realized, program and financial benefits will be achieved, and other factors considered in the analysis and selection;
8) the description of the assumptions used and the expected functionality associated with each alternative that explains how the stated benefits and objectives will be achieved;
9) the description of the selected solution, and the business process after implementation of the solution, including the analytical basis as to why the selected solution best meets the problem/opportunity and the associated assumptions/constraints;
10) the description of the proposed project evaluation methodology for measuring pre- and post-project conditions in evaluating and measuring achievement of the project objectives and benefits;
11) the description of proposed procurement and implementation strategies;
12) the detailed description of the current cost of any existing system that the proposal will be replacing or modifying in support of the programmatic function;
13) the detailed description of the proposed costs, financial benefits, and funding by fiscal year for each year of the project;
14) the identification of proposed funding sources by fund type (e.g. General Fund, federal funds, special funds) and proposed funding mechanism by augmentation or redirection, identifying the source for any redirections; and
15) the project schedule with identification of phases and major milestones for implementation activities, project completion, realization of benefits, decommissioning any displaced systems, and completion/submission of the Post Implementation Evaluation Report.

Business-Based Procurement IT Proposals

For those proposals that initially recommend a business-based procurement and the proposed technical solution is not determined in the FSR, the agency must submit an SPR to Finance for review and approval prior to contract award. Conditions for proceeding with the procurement process will be fully outlined in the FSR approval letter. The FSR will be focused on (1) the various alternatives considered to derive the conclusion that a business-based procurement is

the best solution; (2) a project cost and schedule that details the planning and procurement resources, milestones, and timelines; and (3) provides a more general estimate of the development, implementation, and maintenance/operations resources, costs, milestones, and timelines for the expected duration of the project.

Evaluation Planning

Finance may require submission of a Project Evaluation Plan prior to project approval or prior to project start-up for certain specified projects. The need for a Project Evaluation Plan will be identified to the agency during review of the FSR or in Finance's written approval of the IT project. The purpose of the plan is to ensure that the anticipated project objectives and benefits can be confirmed and realized as a result of completing the project proposal. If the plan is requested in the approval letter, Finance will issue its comments/approval of the plan in writing to the agency. (Even if not required by Finance, the Project Evaluation Plan may be useful for agencies in planning and developing the Post Implementation Evaluation Report.) The plan must contain the following elements:

1) the identification of specific project objectives and benefits to be achieved by the project;
2) the methodology and schedule for measuring the current business and IT areas that are being addressed by the new IT proposal to establish the pre-project measurements;
3) the methodology and schedule for measuring the business areas that after project implementation will quantify the degree the business objectives and benefits have been achieved;
4) a discussion on how conditions/factors external to the project that may also impact the business area measurements will be handled in order to gather valid and comparable pre- and post-project measurements of business objectives and benefits; and
5) the methodology and schedule for preparation of the Post Implementation Evaluation Report.

Alternative Procurement

Alternative Procurement proposals are a special category of IT proposals that use a non-traditional procurement method to solve a business problem (see SAM Section 5215). These proposals are used when it is determined that the agency's needs may be better met through the use of different procurement techniques within a competitive framework. These proposals must be reported to Finance as defined under the **New Information Technology Investments** section, above.

Feasibility Preparation Instructions

Table of Contents/FSR Outline

FSR PREPARATION INSTRUCTIONS

1.0 Executive Project Approval Transmittal

A formal signature page will accompany each FSR submitted to Finance identifying specific information relating to the proposed IT project and containing the signatures of the approving agency or department and Agency executives. The following are the components of the Transmittal. (The Transmittal template is available in SIMM Section 20, Item A).

1. **Department Name:** Enter the name of the State department, agency, office, board, commission, or institution that prepared the FSR and is responsible for the proposed project. If an FSR represents a proposed project in which multiple agencies will have a role, one agency should be designated as owner.
2. **Project Title:** Enter the official name of the project as determined by the agency.
3. **Project Acronym:** Enter the official abbreviation for the proposed project that will be used as a common reference to the project. Projects are often more commonly known by their acronym, e.g., the Statewide Automated Welfare System (SAWS).
4. **Departmental Priority:** Enter the agency-wide or department-wide priority assigned to the project. The priority assignment is a sequential number where "1" is the highest priority. Only one project per funding source in a given fiscal year may be assigned a priority of "1". For example, if an agency submits three FSRs for review, the priority assignments would be "1", "2", and "3". In the case of multiple funding sources, the priority assignment should be based on the primary State funding source.
5. **Agency Priority:** Enter the Agency-wide priority assigned to the project. (If the department or agency does not report through an Agency, this priority would match the departmental or agency priority.) The priority assignment is a sequential number, where "1" is the highest priority. Only one project per funding source in a given fiscal year can be assigned a priority of "1". For example, if an agency represents departments submitting five FSRs for review, the priority assignments would be "1", "2", "3", "4", and "5". In the case of multiple funding sources, the priority assignment should be based on the primary State funding source.
6. **Approval Signatures:** The signatures of executives within the department or agency are required, documenting commitment and appropriate involvement at the agency or departmental level. The required signatures include those of the Chief Information Officer, Budget Officer, Department Director (or Chief Deputy Director), and Agency Secretary (or Agency Undersecretary).

2.0 Information Technology: Project Summary Package

An Information Technology Project Summary Package must be prepared and attached to each FSR or SPR. Instructions for completing the Project Summary Package follow. (The Project Summary Package template is available in SIMM Section 20, Item B).

2.1 Section A: Executive Summary

1. **Submittal Date**: The date the FSR is submitted to Finance.
2. **Type of Document**: Indicate the type of document being submitted: Feasibility Study Report (FSR).
    - Project Number: Enter the Project Number if previously assigned by a control agency
3. **Project Title**: Enter the official name of the project as determined by the agency or department.
    - **Project Acronym**: Enter the official abbreviation for the proposed project that will be used as a common reference to the project.
    - **Estimated Project Start Date**: Enter the most accurate projection available for the estimated start date (MM/DD/YYYY).
    - **Estimated Project End Date**: Enter the most accurate projection available for the estimated completion date (MM/DD/YYYY).
4. **Submitting Department**: Enter the name of the state department, agency, office, board, commission, or institution that prepared the FSR and is responsible for the proposed project described in the FSR. If an FSR represents a proposed project in which multiple agencies will have a role, one agency should be designated as owner.
5. **Reporting Agency**: Enter the name of the reporting Agency for the agency or department, if any.
6. **Project Objective**: Provide a brief statement of the project's primary objective in terms of the programmatic problem or opportunity to be addressed.
7. **Proposed Solution**: Provide a brief statement summarizing the proposed solution as documented in the FSR. This item should consist of a concise, non-technical, management-oriented description of the project.
8. **Major Milestones**: Identify the major milestones for project procurement, development, and implementation related to project deliverables and for which project metrics can be applied, and the estimated completion date for each milestone. Milestones typically represent measurable events, such as delivery of a product. Targeted events that should be included are requirements definition, design completion, development completion, testing, production, and post-implementation evaluation. Any other key management checkpoints critical to project success, such as procurement dates or partial implementation dates, should also be included. Include the date the PIER will be completed.
    - **Key Deliverables**: Identify the key deliverables associated with the major milestones and their estimated completion dates.

2.2 Section B: Project Contacts

Contact Information: Supply the names, phone numbers, fax numbers, and e-mail addresses of the principals involved in the project:

- Executive Contacts: Agency Secretary (if any), Department Director, Budget Officer, Chief Information Officer (CIO), and the Project Sponsor.
- Direct Contacts: Document Preparer; Primary Contact; Contract Manager; and Project Manager.

2.3 Section C: Project Relevance to State and/or Department/Agency Plans

1. **What is the date of your current Operational Recovery Plan (ORP)?** Enter the date the ORP was last approved.
2. **What is the date of your current Agency Information Management Strategy (AIMS)?** Enter the date the AIMS was last approved.
3. **For the proposed project, provide the page reference in your current AIMS and/or strategic business plan**. Indicate whether the proposed project is identified in the agency's AIMS and/or strategic business plan, and enter the corresponding page number in that document.
4. **Is the project reportable to control agencies? If YES, check all that apply:**

    a. The estimated total development and acquisition costs exceed the Finance established agency cost threshold. (This information can be found in the latest Budget Letter issued by Finance regarding IT reporting or by contacting the Finance Technology Investment Review Unit.)
    b. The new system development or acquisition is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.
    c. The project involves a budget action.
    d. The project meets a condition previously imposed by Finance.

2.4 Section D: Budget Information

The data from the Economic Analysis Worksheets (EAW) for each fiscal year should be summarized in this section. If the proposal modifies or replaces an existing operation, savings and cost avoidances should be based upon comparison with the current method of program operation. If the FSR addresses a new program operation, estimated costs associated with the proposed information technology capability should be provided. If the proposed solution will increase program income (i.e., tax revenues, collectible audit exceptions, accounts receivable, etc.), the increased income should be reflected on the Economic Analysis Summary.

1. **Budget Augmentation Required**? Check whether or not a budget augmentation will be required to complete the proposed project (Y/N). Identify the requested dollars by fiscal year throughout the project from the Project Funding Plan.
2. **Project Costs**: Summarize IT project costs from the Proposed Alternative Worksheet.
3. **Sources of Funding**: Indicate the anticipated source of funding by fiscal year for the proposed project. If the project is to be funded from multiple sources, quantify the amount from each source. Examples include the State General Fund, interagency reimbursements, Federal funds, special funds, grant funds, and contracts.

    Note that the amounts in lines 4 and 12 should coincide.

4. **Project Financial Benefits**: Indicate the amount of cost savings to be realized each fiscal year from the Project Funding Plan Worksheet in the EAW. Also enter the Revenue Increase amounts by fiscal year from the Proposed Alternative Worksheet in the EAW.

2.5 Section E: Vendor Project Budget

- **Vendor Cost for FSR Development**. If a vendor assisted the agency in conducting the feasibility study and documenting the results in the FSR, identify the cost of these resources.
- **Vendor Name**: If a vendor assisted the agency in conducting the feasibility study and documenting the results in the FSR, identify the name of the individual or company.

Vendor Project Budget

1. **Fiscal Year**. Enter the fiscal years from beginning through completion of the proposed project.
2. **Primary Vendor Budget**: Enter the estimated costs for the primary vendor by fiscal year.
3. **Independent Oversight Budget**: Enter the estimated costs for independent project oversight and project management contract costs by fiscal year.
4. **IV&V Budget**: Enter the estimated costs for independent verification and validation contract costs by fiscal year.
5. **Other Budget**: Total other vendor budgets.
6. **Total Vendor Budget**: Total of the estimated contract costs by fiscal year.

***NOTE*: The remainder of this section should be completed only for submittal of Special Project Reports. Please refer to SIMM Section 30 for additional information.**

2.6 Section F: Risk Assessment Information

1. **Risk Management Plan**: Indicate whether the agency has prepared a Risk Management Plan for the proposed project (Y/N).
2. **The General Comments area** is used to provide a high-level summary of the agency's Risk Management Plan.

3.0 Business Case

3.1 Business Program Background

This section should include the following:

1. A description of the business program to be supported by the information technology proposal.
2. A description of the current business process that is the subject of the proposal (this may include narrative and/or visual representation).
3. The impact of the proposal on the business program/process.

4. The customers and users of the business program/process. Customers will typically include the subset of the public served by the business program, while users will include agency staff involved in the program and State organizations requiring information from the program.

The program background should contain a brief summary of:

1. The relevant features of the agency program experiencing the problem or opportunity (including the manner and extent to which information technology is currently applied); and
2. The conditions which created, or significantly contributed to, the problem or opportunity being addressed by the FSR. Examples include workload increases, staff reductions, additional requirements mandated by law or Federal regulations, and limitations in the capacity or capability of the information technology resources currently used in the agency.

The background summary should provide the facts necessary to understand the problem or opportunity and the defined objectives within their business context. If possible, this summary should contain a definition of the affected units of work and estimates of the quantity of work processed; for example, number of cases decided, licenses issued, or loans processed during the month, quarter, or year. Estimates should address historic workload growth, seasonal variations, and future projections. Finally, business assumptions the agency has made that will impact the proposed project should be documented: e.g., caseload growth, etc.

3.2 Business Problem or Opportunity

The problem/opportunity statement should provide a general discussion, in business terms, of the problems or opportunities that are to be addressed. For example, "Our department is required to disburse benefit checks by the fifth working day of each month. With our current system, we are able to meet that deadline only 70% of the time." Typically, a problem or opportunity relates to the need to:

1. provide necessary services more efficiently or effectively, or new services mandated by law.
2. obtain needed information that is not currently available.
3. reduce the costs of program operations.
4. generate more revenue.
5. avoid unnecessary increases in a program's budget.

In addition to being stated in business terms, the discussion of each problem or opportunity should provide:

- an understanding of the magnitude of the problem or opportunity; and
- a basis for determining the extent to which the problem or opportunity would be addressed if an appropriate alternative were implemented.

Problems and opportunities should be analyzed in terms of their impact on the agency's mission and programs. Key questions to ask include W*hat created the problem?* (or H*ow was the opportunity recognized?*); W*hat is the magnitude of the problem or opportunity?;* and *What are the consequences for the agency and its clients if the problem or opportunity is not addressed?*

Examine contributing factors, such as workload increases or staff reductions, and fiscal constraints, such as decreased federal funding. If the problem or opportunity results from new legislative requirements or changes in mission or priorities, such factors should be considered. In some cases, the consequences of taking no action in response to the problem or opportunity should be assessed.

By understanding the magnitude of the problem or opportunity, the agency will be better able to estimate reasonable amounts of resources to expend in responding to it and the extent to which a response will resolve it.

3.3 Business Objectives

Business objectives define the significant results that must be achieved for a proposed solution to be an effective response to the problem or opportunity being addressed. Objectives are the "success factors" against which the agency and control agencies can measure the responsiveness of the recommended alternative in addressing the problem or opportunity being studied.

It is essential that:

- each objective relate to a problem or opportunity specified in the problem/opportunity statement
- each objective be stated in programmatic and observable/measurable terms
- each objective be realistically achievable

In establishing objectives, decide whether the response should be concerned with costs, agency operations, or both. If the response relates to the costs of one or more programs, determine whether it should be expected to reduce costs, avoid costs, or increase revenue. If the response relates to operations (how a program provides services or creates products), determine if responding to the problem will improve timeliness or quality. Improvements in the timeliness and quality of program operations must be related to established program requirements. In addition, applications of information technology are ordinarily expected to pay for themselves. The agency should be able to translate operational improvements into reduced costs.

Establishment of business-oriented objectives should generally include the following steps:

1. **Setting general objectives**: Once a program process has been identified as a candidate for enhancement through the application of information technology, objectives should be stated in broad terms, such as to decrease costs, increase revenues, increase service levels, or avoid additional costs in meeting an increased workload.
2. **Analyzing the program process**: With the general objectives in mind, the program process can be analyzed in terms of information flow and management to determine how information technology may contribute to the accomplishment of those objectives. Automation of a program process cannot be accomplished in an effective manner without a thorough study and understanding of the processes affected. Identify the operational areas in which change would directly contribute to the accomplishment of the general objectives. For example, if a general objective is to reduce program backlog without increasing program costs,

a target might be to reduce the average time or effort required to locate needed records.

3. **Setting specific program objectives**: Develop specific program objectives for improving the program process. If the analysis of the program process indicates that the application of information technology is warranted, establish specific, quantifiable objectives, such as: "reduce the average amount of employee overtime worked by [a specified number of] hours per month, thereby saving [a specified dollar amount] per year"). It is typically not enough to say that a new system will be faster than its predecessor. The agency should be able to describe how the increased speed will translate into program cost or operational improvements.

3.4 Business Functional Requirements

This section should provide a complete description of the essential characteristics that the proposed solution must incorporate to satisfy each objective. For example, an objective might be "to mail 98% of the benefit checks by the end of the fifth working day of each month." A related functional requirement might be that "the response must be capable of producing *xx* checks during one work shift". Describe the functional requirements in sufficient detail for executive and program management and control agency staff to understand the functions to be performed by the information technology; examples follow on the next page.

Inputs	Outputs	Files	Scope of Effort	Security Requirements	Interface requirements
data groups	data groups	data groups	number of users	maintain data integrity	interactions with other organizations
volumes	volumes	size	number of locations	satisfy confidentiality and security requirements	information sharing
frequency	frequency	retention period			reporting requirements
source	quality	update frequency			
quality	media	volumes			
media	distribution				
seasonal variation					
accuracy					

The functional requirements should also describe information processing requirements and special requirements related to staffing and training.

4.0 Baseline Analysis

4.1 Current Method

Often the agency must examine several existing information systems, as well as related manual processes, before it can obtain a clear understanding of the information management practices that are related to the problem or opportunity. Reviewing the current methods of operation will (1) help ensure that the full technical and managerial implications of the problem or opportunity are understood; and (2) provide a baseline against which potential advantages and disadvantages of changes in information management systems may be measured.

If a current information system exists, either manual or automated, explore the following characteristics of the existing system:

1. the objectives of the current system;
2. the ability of the system to meet current and projected program and workload requirements (e.g., processing backlogs or increasing system demands);
3. level of user and technical staff satisfaction with the system;
4. data input (e.g., key entry, optical character recognition), related manual procedures, processing (e.g., data validation routines) and output characteristics;
5. data characteristics (content, structure, size, volatility, completeness, accuracy, etc.);
6. system provisions for security, privacy and confidentiality;
7. equipment requirements of the current system (e.g., processors, peripherals, and communications devices);
8. software characteristics (e.g., application software, operating system software, etc.);
9. internal and external interfaces;
10. personnel requirements, including management, data entry, operations, maintenance, and user liaison;
11. system documentation (format, availability, and accuracy); and
12. failures of the current system to meet the objectives and functional requirements of an acceptable response to the problem or opportunity.

Some of the factors listed above apply primarily to automated systems. Investigation of manual operations should be similar in scope, but tailored to the special characteristics of such operations. Existing system costs, both information technology and program, should be documented through completion of the Economic Analysis Worksheets (see the EAW Section 8.0).

4.2 Technical Environment

Agency staff will find it helpful to review the organizational, managerial, and technical environment within which the proposed solution will be implemented. Identify assumptions and constraints that affect the problem or opportunity and that will impact the implementation of an acceptable solution. Consider the following factors:

1. The expected operational life of a proposed solution.
2. The necessary interaction of a proposed solution with other systems, agency programs, and organizations (such as sharing of information or intergovernmental data exchange).
3. State-level information processing policies, such as the enterprise system strategy.
4. Financial constraints, including fiscal year limitations and potential financial impact on local government.
5. Legal and public policy constraints (such as confidentiality, security and privacy, the Freedom of Information Act, the Information Practices Act, the California Public Records Act, the State Records Management Act, or other legislatively mandated requirements).
6. Agency policies and procedures related to information management.
7. Anticipated changes in equipment, software, or the operating environment.
8. Availability of personnel resources for development and operation of information management applications, including required special skills and potential recruitment.

4.2.1 Existing Infrastructure

This section should briefly describe the agency's existing infrastructure and technical architecture to provide a context in which the proposed solution will be implemented. Identify any agency, as well as statewide, technical standards or constraints that might appropriately narrow the range of reasonable technical alternatives. Relevant technical standards might relate to the following areas:

1. desktop workstations
2. LAN servers
3. network protocols
4. application development software
5. personal productivity software
6. operating system software
7. database management software
8. application development methodology
9. project management methodology

The agency may also use this section to document additional technical requirements of a proposed solution, such as technical staff training. **However, if the agency proposes a business-based procurement approach, the FSR will include few technical requirements, but instead focus on business requirements.**

5.0 Proposed Solution

The Proposed Solution Section identifies the alternative which best satisfies the previously defined objectives and functional requirements. It also provides additional information on the course of action proposed in the FSR. This section should incorporate sufficient detail to allow decision-makers to confirm the advantages and disadvantages of the recommended alternative in terms of:

1. objectives and functional requirements

2. overall program costs and benefits
3. resources (time, funding, people, expertise)
4. potential risks associated with the alternative

If the proposed solution is to undertake a business-based procurement seeking a technical solution from vendors, this section should include only the rationale for selecting the business-based procurement process. At the completion of the procurement process, but prior to signing a contract, the state agency will be required to submit an SPR describing the vendor's proposed solution and any changes in the state agency scope of work, as required by the Department of Finance in its initial FSR approval letter.

A business-based procurement solution must include a detailed procurement plan and schedule, including the estimated cost of the procurement process. In addition, this solution must include a more general plan and schedule and costs for the project development, implementation, and maintenance phases.

5.1 Solution Description

If the state agency has identified a technical solution, identify the proposed solution and discuss the business process upon implementation of the solution; graphic representation may be included, if applicable. Address each of the following subjects, *if applicable to the solution*:

1. **Hardware:** What type of equipment will the proposed solution require? Provide sufficient detail regarding the equipment components, such as processors, workstations, peripherals, and communications devices to allow a complete understanding of the requirements.
2. **Software**: What are the software requirements associated with the solution? Include operating system software, application software, and database management software.
3. **Technical platform**: Briefly describe the technical platform on which the solution will operate.
4. **Development approach**: Will any necessary application development be completed in-house by technical staff or by contract staff, or will a commercial off-the-shelf solution be purchased? Will the project team use a structured development methodology and, if so, does the project team have experience with use of the methodology?
5. **Integration issues**: Are there other systems with which the solution must interoperate, and who will be responsible for ensuring successful integration?
6. **Procurement approach**: Describe the acquisition methodology the agency plans to use (CMAS, MSA, RFQ / IFB / RFP, etc.) and the procurement schedule. Prior to submission of the FSR for Finance review, State agencies must consult with the Department of General Services - Procurement Division to ensure alignment with current procurement guidelines. Include a description of the market research conducted that supports the proposed alternative and the procurement strategy. Also describe how the procurement approach was selected and compare and contrast procurement approaches if alternatives were considered. A lease / purchase analysis by fiscal year may be included for proposed acquisition of equipment. (See SAM Sections 5206-5208).

7. **Technical interfaces**: Are there other systems, either internal or external, with which the proposed solution is required to interface? If so, are there any significant issues in establishing the interface, and how will this be accomplished?
8. **Testing plan**: Briefly describe the agency's plan for unit, system, and acceptance testing. Are there any significant anticipated testing issues?
9. **Resource requirements**: Identify the expected human resource requirements, in terms of staffing and training, and technical requirements for implementation, maintenance, and on-going operation of the proposed solution. Consider training requirements for both user and technical staff.
10. **Training plan**: Briefly describe the agency's training plan for preparing program staff to use the system and for technical staff to develop, operate, and maintain the system.
11. **On-going maintenance**: How will the agency provide for on-going operations and maintenance of the system? What are the availability requirements of the proposed system? Discuss the agency's long-term maintenance and operations strategy and how it will address those availability requirements (include a discussion of applicable warranties and maintenance agreements).
12. **Information security**: What are the security requirements of the proposed system, and how were they determined? What types of safeguards will the agency implement to ensure the required security of the information processed and maintained by the proposed solution?
13. **Confidentiality**: What are the confidentiality requirements associated with the information processed and maintained by the proposed system? What measures will the agency use to meet these confidentiality requirements?
14. **Impact on end users**: What is the anticipated impact of the new system on its end users, and what actions are planned to address these issues? Consider change acceptance, training needs, and modifications in the way in which work activities will be completed.
15. **Impact on existing system**: What is the expected impact on the existing system? If the existing system will need to be supported for a period of time, have resources for this effort been considered? Have data conversion issues been addressed? If the proposed solution would divert staff or other resources from other projects, indicate the effect of such a diversion on agency programs.
16. **Consistency with overall strategies**: Discuss the alignment of the proposed project with the agency's Agency Information Management Strategy (AIMS) and strategic business plan, as well as the State's strategic direction for information technology.
17. **Impact on current infrastructure**: Will the proposed solution require any changes to the agency's existing information technology infrastructure? Will additional processing or communications capacity be required to support the solution, and have related costs been included?
18. **Impact on data center(s):** If the solution requires processing support from one of the State's data centers, has the agency coordinated with the data center? Does sufficient support capability currently exist at the data center, or will the data center's infrastructure need to be augmented? Have cost estimates been provided by the data center and included in the EAWs (see EAW Section 8.0)?
19. **Data center consolidation**: Is the proposed solution consistent with the State's requirement that all new non-mainframe systems, except those used for LAN and office automation functions, be sited at one of the major data centers unless the

agency can provide compelling business requirements for alternate siting and identify all costs and activities associated with the support of the system?

20. **Backup and operational recovery**: What are the business requirements for recovery of the proposed IT system following a site or regional disaster, and how will the agency address those requirements on an on-going basis? Identify all one-time and on-going costs associated with the proposed operational recovery plan.
21. **Public access**: Does the proposed solution provide direct public access to State databases by private sector organizations or individuals? If so, what data safeguards are required, and how will they be implemented and maintained on an on-going basis?
22. **Costs and Benefits**: Discuss the estimated one-time development and acquisition costs, as well as the on-going maintenance and operations costs expected to be associated with the project. This information should be at a sufficient level of detail (e.g., number and capacity of proposed hardware, etc.) to enable control agencies to fully evaluate the cost impact of the proposal. Also discuss the anticipated programmatic benefits of the proposal, including tangible and intangible benefits, revenue generation, cost savings, and cost avoidances. **DO NOT include the costs of the feasibility study**. **DO include the costs of procurement**.
23. **Sources of funding**: Explain how the proposed alternative is to be funded by fiscal year. If the project is to be funded from multiple sources, identify each source and indicate the percentage from each source. Also indicate whether funds have been budgeted for this purpose or, if a request for budget augmentation will be submitted, cite the fiscal year.

5.2 Rationale for Selection

Explain the rationale for selection of the proposed solution. This should be a detailed rationale, but it may be summarized if the reasons are clearly explained elsewhere, such as in the solution description. In this section, describe how the proposed solution best meets the objectives and requirements of a response to the problem or opportunity. Also describe the assumptions and constraints that impacted the selection of the proposed solution.

5.3 Other Alternatives Considered

It is very rare that any IT project focused on business problems/opportunities, business objectives, and business requirements would have only one solution (other than “do nothing”). Finance expects state agencies to conduct a thorough analysis of all feasible alternatives that will meet the project’s objectives and requirements. FSRs submitted with only the proposed solution and no other feasible alternatives considered (the “do nothing” alternative does not meet the requirement of an alternative analysis) will not be accepted without a detailed discussion describing the specific research undertaken to justify why no other possible alternative exists.

Each alternative should be assessed in terms of its ability to satisfy the previously defined objectives and functional requirements. This section should include a description of the alternative solutions considered but not selected. Typical alternatives include creating a new manual system, enhancing an existing automated system, developing a new automated system in-house, and purchasing a commercial-off-the-shelf system (with or without modifications).

Automated system solutions may include a variety of technological alternatives, such as personal computers, local area networks, office systems, minicomputers, and use of one of the State's data centers.

An example follows:

> An agency has determined that its current automated information system for caseload management does not meet its requirements. The data is not compatible with the data of related agency programs; insufficient data validation is performed, resulting in a significant percentage of records in error; and the system is so complex that users must receive extensive training.

The agency might identify the following possible alternative solutions:

- Modify the software for the current system to improve data validation and ease of use
- Develop a new caseload management system to meet program requirements
- Develop an agency-wide database system, combining data from related programs

5.3.1 Describing Alternatives

Describe each alternative that will satisfy those objectives and requirements. Include in that description the following components:

1. **Description:** Provide a high-level description of the alternative, explaining how it meets or does not meet the functional requirements and, ultimately, the stated objectives. Include information that will allow the reviewer to verify the stated conclusions.
2. **Costs:** For alternatives that fully satisfy the objectives and functional requirements, estimate the associated one-time (development/acquisition costs), continuing (operations/maintenance costs), and total project costs. Include the costs of the system and those portions of the agency program(s) impacted by the system. The costs of the feasible alternatives considered must be included in the EAW (Section 8.0).

   For business-based procurements, include the costs of the procurement phase in addition to costs outlined above.

3. **Benefits:** The nature and magnitude of economic benefits that would result from implementing the alternative should be described if these differ from the benefits that would be achieved through other alternatives considered The nature of any intangible benefits that would result from implementing the alternative should also be described. These benefits generally consist of improved levels of service (in terms of improved timeliness or quality necessary for complying with specified policies).
4. **Advantages:** List the advantages of the alternative relative to the other alternatives considered. An advantage may simply be to meet certain functional requirements better than another alternative, or consistency with the agency's overall strategy for information management.

5. **Disadvantages:** Relative to the other alternatives considered, list any disadvantages that are not apparent from simply assessing the costs and benefits. Examples might include the need for significant technical staff support, or the security implications of implementation in multiple locations.

6.0 Project Management Plan

Preparing a good Project Management Plan is essential to managing a project successfully. The project plan clarifies expectations and becomes the road map for successful completion. You may follow the Project Management Methodology (see SIMM Section 200) or your own methodology for your planning efforts. Once you have completed your planning activities, the following documentation must be included in the FSR as evidence of thorough project planning. The level of detail must be commensurate with the scope, complexity and risk of the project.

These guidelines show suggested formats for some subsections. Unless a specific form name is identified, these are only suggestions; the information may be presented in any appropriate format as long as the required elements are included. (Note: Although project planning includes risk management, this topic is covered separately in Part 7.)

6.1 Project Manager Qualifications

The successful completion of an IT project requires that qualified project managers will be managing state IT projects. To undertake an IT project, the agency must match the manager's experience and training to the complexity and risk level of the project. Include in the FSR a summary of the skills and level of project management experience required to successfully manage this particular project. These qualifications should be based on the unique characteristics of the project, and previous IT project management experiences. This section will demonstrate the agency's commitment to assign a project manager with the appropriate skills, education and experience.

6.2 Project Management Methodology

The Project Management Methodology (PMM) (see SIMM Section 200) identifies the essential components of IT project management state agencies are expected to follow. Each agency may develop or select its own methodology as long as it meets the basic requirements identified in the PMM. Please describe briefly the methodology selected for the IT project described in the FSR.

6.3 Project Organization

To better assess this project's impact on your agency, Finance needs current organization charts for the following:

1. The project team, including number and classification of team members
2. The impacted program organization(s)
3. The Information Systems organization
4. The department or agency

6.4 Project Priorities

Managing a project requires the balancing of three factors: resources, schedule, and scope. These three factors are interrelated; a change in one of them causes the others to change as well. Project stakeholders need to agree on the importance of each of these factors before the project begins, as future project management decisions will be guided by these priorities. Use a project trade-off matrix to show the relative importance of each factor:

- *constrained* means the factor cannot be changed
- *accepted* means the factor is somewhat flexible to the project circumstance
- *improved* means that the factor can be adjusted.

For this project, identify one variable to be *constrained*, one to be *improved* and one to be *accepted*.

Schedule	Scope	Resources

6.5 Project Plan

6.5.1 Project Scope

Provide a concise statement of what this project will accomplish, and what it will not try to accomplish. This scope of work statement is the foundation of your project plan and must be consistent with the project objectives and requirements.

6.5.2 Project Assumptions

For the purposes of project planning, certain circumstances or conditions are assumed to be true. Please briefly describe the major assumptions under which this project will be executed.

6.5.3 Project Phasing

State agencies should plan information technology projects to be implemented in independent phases, especially those that are expected to take longer than one year to develop and implement. Phases should consist of the smallest set of tasks, resources and risks, and utilize the shortest implementation schedules that will deliver **useful and measurable business results**. Whenever possible, the initial project phase shall be confined to delivering the essential core functionality that will provide the greatest portion of the benefits of the proposed system.

When planning for phased project implementation, specific phases should meet the following criteria:

1. A phase is an economically and programmatically separable segment and should have an independent and substantial programmatic use even if no additional components are acquired.

2. Funding may be identified and/or approved separately for each phase or for the entire project.
3. Each phase, being separate and distinct, should provide value as a standalone project so that if a supplier relationship is terminated after a phase, the work completed is still of value.
4. A supplier will be paid when, and if, the deliverable is completed, tested and accepted.
5. Subsequent phases may be redesigned depending on the results of early phases.

In this section of the FSR, describe the phases planned for this project and what each phase will deliver; or justify why phasing is not appropriate.

Project Phase	Phase Deliverables

6.5.4 Roles and Responsibilities

A formal project structure provides participants with a clear understanding of the authority and responsibility necessary for successful accomplishment of project activities, and enables project team members to be held accountable for effective performance of their assignments.

Briefly describe the roles and responsibilities of the major participants in the project. These will probably include, at a minimum, the project manager, executive management, program management and staff, and project team members. In particular, if outside vendor resources will be used to assist with the project, clearly differentiate between the roles and responsibilities of State staff versus those of the vendor. Include tasks such as data conversion, training, project management and oversight, and ongoing maintenance, as appropriate.

6.5.5 Project Schedule

Based on the project's work breakdown structure (e.g., Gantt Chart) identify high-level tasks for the project. Each project is different and requires a unique set of tasks. As appropriate, indicate that you have planned for tasks such as procurement, design, development/programming and/or software modification, data conversion, installation, training for end users, training for technical staff, etc.

For the tasks identified, also provide a summary schedule for status reporting against which completion of tasks during the course of the project will be monitored. The schedule should focus on the duration of critical tasks, major management decision points, and progress reporting milestones. The milestones should reflect products and major events that may be readily identified as completed or not completed on the specified due date. Milestones should

be spaced at reasonable intervals which allow management or control agency monitoring of project progress.

6.6 Project Monitoring

Describe the process for tracking and reporting on the status of project deliverables, project schedule and project budget, or identify your standard procedure that will be followed. Include a description of any planned independent project oversight, such as the use of consultants for project management oversight and/or independent verification and validation (IV&V), and the level of agency oversight to be provided.

6.7 Project Quality

Briefly summarize your plan for assuring that the project's results will meet the business and technical objectives and requirements, as well as applicable Federal, State and/or state agency standards. Describe your quality assurance and/or quality control processes, and/or identify your standard procedure that will be followed. Include any independent verification and validation planned for this project.

6.8 Change Management

Every project experiences changes from the original plan, whether minor or major, as well as creating change as a direct result of the project. Establishing the change management approach in advance helps keep the project in control and prepares the impacted end users for changes in their work environment and processes. Summarize your change management plan to describe your process to track and manage changes over the life of the project, including following initial implementation.

6.9 Authorization Required

Identify any special authorization that must be obtained for the proposed alternative; e.g., Federal agency funding approval or State legislative review. Explain the steps that have been taken to obtain the required authorization and the results of those steps.

7.0 Risk Management Plan

The Risk Management Plan documents the process and procedures that will be used to manage project risks: identifies the persons responsible for managing various areas of risk, how risks will be tracked throughout the life cycle, how contingency plans will be implemented, and how reserves will be allocated to handle risks.

At a minimum, Finance requires that the following components be included in the RMP:

- Risk Management Approach (Reference the Project Management Methodology, Risk Management - see SIMM Section 200.)
- Risk Management Worksheet

7.1 Risk Management Worksheet

The Risk Management Worksheet is a display of the identified risks and the key attributes or characteristics for each, including:

1. **Risk Category/Event Description**: a description of the risk event and risk type (an example of a risk category is "Personnel"; an example of a risk event is "Lack of expertise in the software/hardware").
2. **Probability**: the likelihood of the risk event occurring (use a decimal value from 0 to 1 (e.g., 0.70) to express the probability of the risk event occurring).
3. **Affected Project Area/Element:** the component of the project that will be impacted by the risk event (e.g., schedule, budget, system/project interfaces, hardware, software, etc.).
4. **Preventive/Contingency Measure(s):** the measures or actions that will be taken to minimize the effect of the risk event.

Risk management sets forth a discipline and environment for identifying, analyzing and responding to project risks. It includes maximizing the results of positive events and minimizing the consequences of adverse events.

Risk management addresses the following risk phases:

- **Risk Assessment**: the identification, analysis, quantification, and prioritization of risks.
- **Risk Response**: the actions taken to manage risk, such as risk avoidance, risk acceptance, risk mitigation, risk sharing, and project oversight.
- **Risk Tracking and Control**: the process of monitoring risks and risk response actions to ensure that risk events are actively dealt with over the course of the project.
- **Risk Reserves**: the resources (cost, time and staff) allocated to manage risks.

To be effective, risk management must be an integral part of the way projects are managed. The process that the project team will use to manage project risks should be defined in the planning stage and executed throughout the life of the project.

7.1.1 Assessment

Risk assessment is the process of identifying risks, analyzing and quantifying risks, and prioritizing risks. It includes a review and determination of whether the identified risks are acceptable. Risk assessment is not a one-time event; it should be performed on a regular basis throughout the life of the project.

7.1.2 Risk Identification

The first step in the assessment process is risk identification. Risk identification involves speculating about risks that could affect a project and documenting the characteristics of each. Both internal and external risks should be identified and documented. Internal risks are those that the project team controls or influences, such as staff assignments. External risks are beyond the control or influence of the project team, such as legislative actions.

Risk identification is the responsibility of all members of the project team. Areas to consider as potential sources of risk include:

1. The product of the project
2. The cost of the project
3. The duration of the project
4. The size of the project
5. The complexity of the project
6. The technology used on the project
7. The environment in which the project is executed
8. The skill levels of the project team
9. The relationships between team members
10. Project management methods and procedures
11. How well the project fits the culture of the enterprise
12. How great a change will result from the project

Tools to aid in the identification of risks include:

1. **Work Breakdown Structure (WBS):** The WBS (e.g., Gantt Chart or similar display) encompasses the structure of everything that will be done or delivered on the project and provides a comprehensive framework for assessing every aspect of the project for potential risks.
2. **Historical Information:** Historical information/lessons learned on previous projects can be especially helpful in identifying potential risks.
3. **Project Team Brainstorming:** Individual members of the project team may remember previous occurrences or assumptions.
4. **Interviews:** Interviews with various stakeholders may also aid in the risk identification process. Such communication may help identify risks not identified during the normal planning activities. Records of pre-project interviews (e.g., those conducted during a feasibility study) may also be useful.

7.1.3 Risk Analysis and Quantification

Risk analysis and quantification involves evaluating risks to assess the range of possible project outcomes. It provides information that allows managers to determine what is important to the project, to set priorities, and to allocate resources.

Risk analysis and quantification should be continuously performed and the resulting information should be used for decision-making in all phases of the project. Each risk must be analyzed and sufficiently understood in order to facilitate the decision-making process.

Properly implemented, the risk analysis and quantification process will produce a list of opportunities that should be pursued and threats or risks that should be managed. The risk analysis and quantification process should also document the sources of risk and risk events that the project management team has consciously decided to accept.

Factors to consider during the risk analysis and quantification process include stakeholder risk tolerances, sources of risk, potential risk events, and cost/activity duration estimates.

7.1.4 Risk Prioritization

The final step in the risk assessment process is risk prioritization. Risk prioritization involves ranking the risks to place more management effort on those that are the most critical. Key evaluation factors are probability and potential impact or consequences on missions and business objectives.

7.1.5 Risk Response

Risk response is the action taken to manage risk. Risk response actions include avoidance, acceptance, mitigation, sharing, and project oversight. When assessing risk response options, the project team should consider such factors as schedule, resources, and stakeholder risk tolerances.

It is important to note that risk is a part of any activity and may never be entirely eliminated, nor can all risks ever be known. However, as new risks are identified, appropriate response actions should be developed and the Risk Management Plan should be updated accordingly.

7.1.6 Risk Avoidance

Risk avoidance involves eliminating the risk by eliminating the cause or by using an alternate approach that does not involve the risk. This method is not always an option; however, it is the most effective technique if it can be applied.

7.1.7 Risk Acceptance

Risk acceptance involves simply accepting the risk event and the consequences.

7.1.8 Risk Mitigation

Risk mitigation involves reducing the probability of risk occurrence (e.g., using proven technology to lessen the probability that the product of the project will not work). It involves revising the project's scope/delivery, budget, schedule, or quality to reduce uncertainty on the project.

7.1.9 Risk Sharing

Risk sharing involves shifting some of the risk or risky activities to others, such as contractors, and accepting the remainder.

7.2 Risk Tracking and Control

Risk tracking and control involves establishing and maintaining risk status information, defining action plans, and taking corrective action when appropriate. It involves executing the Risk Management Plan in order to respond to risk events throughout the life of the project.

The elements of risk tracking and control are very similar to the tracking and control functions in project management and can be easily integrated into a project's existing management activities.

7.2.1 Risk Tracking

Risk tracking is required to ensure the effective implementation of the Risk Management Plan. The goal of risk tracking is to provide accurate and timely information to the project management team to enable risk management and help prevent risks from adversely affecting the project.

Risk tracking is considered the "watchdog" function of risk management. It involves monitoring the progress toward resolving risks and reporting on the status and the actions taken. Information that should be tracked and reported on include:

1. The top ten risk items
2. The number of risk items resolved to date
3. The number of new risk items since the last report
4. The number of risk items unresolved
5. The unresolved risk items on the critical path

To facilitate the risk tracking process, a database that includes information on all significant risks should be developed and maintained for the life of the project. In addition, metrics for measuring performance and progress toward resolving risks should be established and maintained.

7.2.2 Risk Control

Risk control is necessary to help prevent failure on a project. Risk control focuses on the risk response actions. It involves executing the Risk Management Plan in order to respond to risk events before they become serious problems. The control function ensures that risk procedures are documented and executed according to plan.

As anticipated risk events occur or fail to occur, and as actual risk events are evaluated and resolved, the Risk Management Plan should be routinely updated.

8.0 Economic Analysis Worksheets (EAWS)

The economic analysis should document the cost and resource assumptions the agency made during the feasibility study process. Examples include the amount allocated for on-going maintenance and projected workload growth. This section should also document any special conditions or issues related to the source(s) of funding for the proposed project. (The special conditions may be documented as footnotes on the EAWs.)

The proposed project should be costed out for at least one full year beyond implementation in order to reflect estimated on-going maintenance and operations costs and establish the ongoing baseline support costs of the new system. If the program supported by the proposed project is cyclical in nature, the economic analysis should reflect the system in operation for one complete cycle.

The Economic Analysis Worksheets (EAWs) provide a standard format for documenting the projected costs and financial benefits of the current method of operation and the proposed

alternative. The worksheets are used to perform cost analyses of the full range of alternatives under consideration. The following Economic Analysis Worksheets **must** be included in the FSR:

1. **Existing System Cost Worksheet**: documenting the current and projected operations/maintenance costs of the current method of operation (baseline). This worksheet reflects the cost of maintaining the existing systems and program process if the proposed solution is not implemented;
2. **Proposed Alternative Worksheet**: documenting the projected one-time costs (development/acquisition costs), continuing costs (operations/maintenance costs), and impacted program costs of the *proposed* alternative;
3. **Alternative System Worksheet(s)**: documenting the projected one-time costs (development/acquisition costs), continuing costs (operations/maintenance costs), and impacted program costs of other alternatives that satisfactorily meet the objectives and functional requirements;
4. **Economic Analysis Summary**: comparing the estimated costs of the proposed alternative, other alternatives meeting the objectives and functional requirements, and the existing system; and,
5. **Project Funding Plan**: documenting the estimated resources needed for implementing the proposed system and the necessary budget actions anticipated.

EAW Instructions and the EAW templates are available in SIMM Section 20, Item C.